UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

JUAN DUARTE and BETSY DUARTE, On Behalf of Themselves and all Others Similarly Situated,

Plaintiffs,

-against-

UNITED STATES METALS REFINING COMPANY, ET AL.,

Defendants.

Civil No.: 2:17-cv-01624-ES-SCM

PLAINTIFFS' MEMORANDUM IN OPPOSITION TO DEFENDANTS' SECOND COMBINED MOTION TO EXCLUDE PLAINTIFFS' EXPERTS

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I. INTRODUCTION AND SUMMARY OF ARGUMENT

Defendants' Motion to Exclude the Opinions of Plaintiffs' Experts, which is limited to specific opinions, should be denied. Plaintiffs' experts used reliable principles and methods and the issues raised go, at best, to the weight of the testimony. Flowers, Sullivan, and Rosenfeld's opinions that the copper smelter is the primary source of pollution in the Potential Class Area ("PCA") are admissible because they considered possible alternative sources of pollution and determined alternative sources, individually and collectively, are insufficient to account for the trio of metals (arsenic, lead, & copper), pattern, and magnitude of contaminants which establish a fingerprint of contaminants in the PCA. Defendants argue that these opinions are unreliable because they failed to exclude hypothesized "alternative sources" of pollution. Defendants' argument that lead-based paint ("LBP") and fill explain the significant, coextensive, elevations of lead, copper, and arsenic within two-miles of the former Smelter and its multi-million dollar cleanup, is contradicted by the ubiquity of these very sources—LBP and fill are common in towns across the State and yet the cleanup of New Jersey soils state-wide is not required. Rather than ignoring these sources, Plaintiffs' expert analyses considered them and establish that these sources are incapable of explaining the PCA contamination pointing to USMR's Smelter ("the Smelter") as the **primary** source of lead, arsenic, and copper across the PCA. Further, Plaintiffs' property damages only require that Defendants' Smelter was a substantial factor in—not the *exclusive or, even, primary cause* of—contamination across the PCA. Plaintiffs satisfy this burden.

Havics' provided the rebuttal opinion that Mattingly's sampling was biased and failed to establish the sampling was representative of PCA soils. This opinion, offered solely as a critique, is based on Mattingly's use of cherry-picked samples and unsupported extrapolation to PCA soils.

Plaintiffs' experts Blum, Sullivan, and Flowers each reviewed literature and agency records of other smelters that found contaminant plumes extend several miles. These other investigations provide qualitative support for the experts' quantitative findings here. The consistency of this qualitative evidence, supporting their conclusions based largely on soil data, by these highly qualified experts is admissible. Their opinions recognize that operational differences partially distinguish these examples, but this goes to weight and should be addressed on cross. Defendants identify no independent findings where smelter where impacts were limited to under a half-mile.

Defendants' challenge of Dr. Zabel's hedonic regression model to determine the class-wide diminution in property value attributable to Smelter Contaminants is premature. Hedonic regression has been approved by the Third Circuit to show generalized proof of injury and to distribute damages on a formulaic basis at the merits phase. All the data necessary to calculate the damages are available. So too, Defendants' claim that Dr. Zabel is not qualified to give appraisal opinion is immaterial, as his opinion is based on his expertise in economics and econometrics; not appraisal. Indeed, appraisal is incapable of determining diminution in property value due to the pollution.

II. FACTUAL BACKGROUND

Defendants' Smelter operated on Middlesex Avenue in Carteret, N.J. from approximately 1902-1986. *See* Doc. 248 at 4. "For the entire period, the smelter spewed forth enormous amounts of contaminating materials…Even after controls were put in place the controls were inadequate, defective and often non-functional."[1] The Smelter released copper, lead, and arsenic into the air.[2] The Smelter emitted "50.1 tons of lead per year from its stacks and release[d] another 36 tons per year in the form of fugitive emissions," indicating "that large quantities of lead [were] released into the

[1] *Reichhold, Inc. v. U.S. Metals Refining Co.*, 655 F. Supp. 2d 400, 416 (D.N.J. 2009).
[2] Doc. 248-8 at 62:02–63:02, 64:08–65:02; Ex. 1, Tr. 14:21–19:18.

atmosphere [through emissions]."[3] By Defendants' estimates, a *minimum* of 59,347 *tons* of lead were emitted into the atmosphere. Doc. 248-10. There were also "continuing state and county notices of violation of air quality standards."[4] The Smelter "blanketed" the entire PCA with copper, arsenic, and lead. Doc. 248, at 2.

This blanketing is documented by over 25,000 soil samples collected across the PCA, mostly by Defendants.[5] Plaintiffs' experts analyzed these data, finding a unique Smelter-related fingerprint—reflected by the trio of metals (lead, arsenic, & copper) fluctuating in unison across the entire PCA—eliminating the possibility that "alternate sources" significantly contributed to contamination in the PCA. While each of these metals can derive from other sources, including natural background, the synchronized elevation of all three metals cannot be explained by any source other than the Smelter. The trend of all three metals decreasing with distance from the Smelter further eliminates the possibility of Defendants' "alternate sources." This is particularly true for copper, directly implicating Defendants' copper Smelter as the primary source of pollution, since there is no known "alternate" significant source of copper nearby. The trademark magnitude, trend, pattern, and co-appearance at levels substantially above background defy arguments that an "alternate source" caused more than isolated, secondary metals in the PCA.

III. LEGAL STANDARD

a. Daubert's Application During Class Certification is Limited to the Rule 23 Inquiry

[3] *Id.* A 400-foot stack operated from 1948-1986. Doc. 248-9, at 104:3–20. Stack height influences the distance emissions will disperse, with taller stacks typically causing farther impacts. *Id.*
[4] *Reichhold*, at 415; *see also* Doc. 248-11(NJDEP violations records).
[5] Lead levels in the PCA average 540.6 (max 21,300), exceeding NJDEP's 137.4 upper limit of the background of lead. *See* Ex. 13, at 14 Table 2, 26 Table 4 "Mean" column.

Daubert has limited application during the class certification phase. *In re Tropicana Orange Juice Mktg. & Sales Practices Litig*., Civ. No. 2:11-07382, 2017 WL 2362848, at *2 (D.N.J. May 31, 2017). Because "the main purpose of *Daubert* exclusion is to protect juries from being swayed by dubious [expert] testimony," "[t]he trial court's 'gatekeeping function' is … reduced 'when the gatekeeper is keeping the gate only for h[er]self.'" *Id.* at 2. And since, at class certification, the District Court serves as the trier-of-fact and no jury is present, the Court should "weigh the parties' expert challenges in light of this consideration." *Id*. Pre-certification *Daubert* challenges should not be used "to conduct a 'free-ranging merits inquir[y].'"[6] Therefore, the only aspects of Plaintiffs' expert opinions ripe for this limited *Daubert* consideration are those necessary to meet Plaintiffs' Rule 23 burden.[7]

b. Rule 702 Favors Admission, Not Foreclosure of the Evidence

The Federal Rules of Evidence favor admitting expert opinions and have a "liberal policy of admissibility," extending to "the substantive as well as the formal qualification of experts."[8] The Third Circuit rejects "overly rigorous requirements of expertise" and holds experts to a liberal qualification standard.[9] The burden of establishing that an expert is qualified is not high.[10] The Court's focus is only on the expert's "principles and methodology, not on the conclusions that they

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[6] *Seibert v. Quest Diagnostics Inc*., Civ. No. 11-0304, 2014 WL 1293510, at *7 (D.N.J. Mar. 31, 2014), quoting *Amgen Inc. v. Connecticut Ret. Plans & Tr. Funds*, 568 U.S. 455, 466 (2013).
[7] *Castro v. Sanofi Pasteur Inc*., 134 F. Supp. 3d. 820, 829 (D.N.J. 2015).
[8] *In re Paoli R.R. Yard PCB Litigation*, 35 F.3d 717, 741 (3d Cir. 1994); *Pineda v. Ford Motor Co*., 520 F.3d. 237, 243 (3d. Cir. 2008) (citations omitted).
[9] *Paoli*, 35 F.3d at 741; *Schneider ex Rel. Estate of Schneider v. Fried*, 320 F.3d 396, 404 (3d Cir. 2003); *Pineda*, 520 F.3d at 244.
[10] *See, e.g., Hammond v. Int'l Harvester Co.,* 691 F.2d 646, 652–53 (3d Cir. 1982) (holding that an engineer with limited qualifications nevertheless could testify in a products liability action involving tractors); *Knight v. Otis Elevator Co*., 596 F.2d 84, 87–88 (3d Cir. 1979) (holding that an expert could testify that unguarded elevator buttons constituted a design defect despite expert's lack of specific background in design and manufacture of elevators).

generate."[11] The test is not whether an "expert might have done a better job" or whether the judge or Defendants agree with the expert.[12]

A district court "should not exclude evidence simply because he or she thinks that there is a flaw in the expert's … process which renders the expert's conclusion incorrect. The judge should only exclude the evidence if the flaw is large enough that the expert lacks 'good grounds' for [their] conclusions."[13] Expert opinions must be founded on "good grounds, not perfect ones," which can exist even if "there are better grounds for some alternative conclusion" or the expert's methodology has flaws. *Paoli*, 35 F.3d. at 744. Arguments about alleged faults in methodology go to the testimony's weight, not its admissibility.[14] "The trial court's role as gatekeeper is not intended to serve as a replacement for the adversary system, and consequently, the rejection of expert testimony is the exception rather than the rule."[15] "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof" remain "the traditional and appropriate means" of challenging experts, not foreclosure of the evidence.[16]

IV. ARGUMENT

a. Plaintiffs' Experts Reliably Opine the Smelter is the Primary Source of Soil Contamination

Plaintiffs offer three experts, Flowers, Sullivan, and Rosenfeld, who opine that the Smelter is the primary source of soil contamination characterized by the (1) significant elevation, of (2) all

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[11] *Daubert*, 509 U.S. 579, 596, 113 S.Ct. 2786 (1993).
[12] *Kannankeril v. Terminix Int'l Inc.*, 128 F.3d 802, 809 (3d Cir. 1997); *Paoli*, 35 F.3d. at 744–45.
[13] *In re TMI Litig.*, 193 F.3d. 613, 665 (3d. Cir. 1999) (amended by 199 F.3d. 158) quoting *Paoli*, 35 F.3d. at 746.
[14] *Thomas v. Reading, Blue Mnt. & N.R. Co.*, Civ. No. 01-5834, 2003 WL 21949156 *5 (E.D. Pa.).
[15] *In re Processed Egg Prod. Antitrust Litig.*, No. 08-MD-2002, 2017 WL 5177757, at *4 (E.D. Pa. Nov. 7, 2017); *see also U.S. v. Mitchell*, 365 F.3d 215, 244–45 (3d. Cir. 2004).
[16] *In re Urethane Antitrust Litig.*, 166 F. Supp. 3d. 501, 504 (D.N.J. 2016), quoting *Daubert*, 509 U.S. at 596.

three metals, (3) across the PCA, and that (4) decreases with distance from the Smelter. These experts analyzed multiple lines of evidence, including potential alternative causes, and concluded that the Smelter was the *primary* source of this contamination. Doc. 248-3 at 13–14, Doc. 248-5 at 22, Doc. 248-6, at 23. The 25,000-plus soil samples—including "representative" transect sampling—demonstrate that the PCA is uniquely contaminated with significantly elevated copper, lead, and arsenic. Doc. 248-17 at 58–74. Ignoring the elephant in the room, Defendants blame the pollution on a perfect storm of "ubiquitous," "common," "alternate sources."[17] Flowers[18] considered these sources and concluded that "[n]umerous individual sources would give rise to a more highly random, localized pattern of contamination that is not observed in the thousands of samples taken in Carteret." Doc. 248-6, at 2. Flowers also considered metal exceedances above background, exceedances that "common" or "ubiquitous" alternative sources cannot explain, that continue beyond the PCA boundary.[19] Defendants' explanation that common sources of metals across the State uniquely contaminated the soils of Carteret—a town where the Smelter spewed thousands of tons of metals into the atmosphere—defies all logic.

Defendants' reliability argument is premised on a causation standard that requires the *exclusion of* other sources of contamination to identify the *sole cause*—this requirement does not apply. For Plaintiffs to prevail, the Smelter "need only be a substantial factor" and "need not be the sole or primary factor producing the injury."[20] Thus in a contamination case, Plaintiffs are not

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[17] Defendants' alternate sources include "historic fill, lead-based paint, and metal containing pesticides. Defs.' Br. at 19 citing Ex. W at 7, 9.

[18] Defendants focus on Flowers, but all three experts considered the role of alternative sources including LBP and fill among others. *See, e.g.,* Ex. 12 Tr. at 58:10-59:18, 59:5-12, 66:2-8, 75:19-24, 81:17-82:4, 92:3-12, 95:9-16, 97:9-98:10; Doc. 248-3, at 52.

[19] Doc. 248-19 ("Based on my analysis of the soil data I conclude that the smelter signal persists throughout the PCA, and background levels are reached somewhere well beyond it.")

[20] *Verdicchio v. Ricca*, 179 N.J. 1 (N.J. 2004) (quoting Modern Tort Law § 4.03, 4-4).

required to do the impossible and entirely rule out other sources.[21] Plaintiffs exceeded this standard because their experts considered alternative sources, including those identified by Defendants.[22] Defendants' contention that reliability requires the exclusion of all alternatives is entirely misplace and the very case they cite explains that an expert "need not exclude all alternatives with certainty."[23] None of Defendants' proposed alternative sources explain the contamination's significant elevation of three metals or decreasing with distance from the Smelter. *See* Doc. 169, 8–15. LBP and leaded gasoline only apply to lead, pesticide use fails to explain the magnitude of contamination and is not consistent with the pattern of metals in the PCA, and sporadic fill cannot explain the consistency, pattern, or magnitude. *Id.* Further, the "common," "ubiquitous" nature of these sources also makes them implausible sources for the unique situation in residential soils in Carteret, which are not found in neighboring towns or counties. Doc. 248-6, at 26–28.

Defendants argue that these experts are unqualified, however, their qualifications are more than sufficient for their opinions. Flowers has both a master's and Ph.D. in geology from Berkeley, with a specialty in theoretical geochemistry and completed a post-doctoral fellowship in the Department of Chemistry. He also has a master's degree in civil and environmental engineering

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[21] *Collins v. Olin Corp.,* 248 F.R.D. 95, 104 (D. Conn. 2008) ("if…conduct is found to be a substantial factor in the contamination…[it] can still be the legal cause even if other sources of contamination exist") (citing *Tufariello v. Long Island R. Co.*, 458 F.3d 80, 87 (2d Cir. 2006); Rest. (Second) of Torts § 431(a) (1965)).

[22] *Heller v. Shaw Indus., Inc*., 167 F.3d. 146, 156 (3d. Cir. 1999). Defendants cite *Michaels v. Avitech, Inc.*, 202 F.3d 746, 753 (5th Cir. 2000), stating that excluding alternative causes is a "necessary ingredient" for expert analysis. Defs.' Br. at 5. Following this statement, however, the court's analysis clarifies that "[t]here can be more than one proximate cause of an injury, and all persons whose negligent conduct contributed to the injury are responsible for it" thus "the plaintiff need not make any attempt to rule out other proximate causes." *Michaels*, 202 F.3d at 753. It was when there was only an "inference" of the cause that the expert's failure to make *any* analysis of alternatives was insufficient. *Id.* at 753–54.

[23] *Brown v. Burlington N. Santa Fe Ry. Co.*, 765 F.3d 765, 773 (7th Cir. 2014).

from Tulane University. Doc. 245-20, at 3. He has been qualified to testify as an expert on the fate and transport of pollution and has specifically been accepted as an expert on the impact of historical metal smelters on soils. *Id*.

Dr. Joel Blum's qualifications are set forth in his Report. Doc. 245-17, at 2–3. He earned PhD in geochemistry and is a Distinguished Professor of Earth and Environmental Sciences, and of Chemistry, at the University of Michigan where he teaches courses in environmental geochemistry. Blum has published extensively on heavy metal contamination, including in soils from metal smelters. Blum has specific experience performing source apportionment of metals emitted to the atmosphere and to soils and sediments. He was an expert member of the National Academy of Sciences Committee on Sources of Lead Contamination and was co-author of a report on lead emissions from smelters. *See* Ex. 7, Blum Tr. at 130:2–5.

Sullivan has a master's degree in meteorology and is Certified Consulting Meteorologist. Doc. 245-16, at 8–9. He has over 45 years of experience as a meteorologist extensively studying the "movement of heavy metals into surrounding land use areas." *Id*. He has been retained by the EPA as Principal Investigator or Study Director for many EPA studies of toxic air pollution" and as "Program Manager for the development of air quality modeling systems for projects associated sponsored by the EPA. *Id*.

i. Dr. Flowers' Opinions are Reliable

1. Dr. Flowers reliably considered and analyzed potential sources

Defendants' basis for excluding Flowers' opinions rests on drawing a false equivalence between his reliable opinions here and those excluded in *Lee-Bolton v. Koppers, Inc.* 319 F.R.D. 346 (N.D. Fla. 2017). Doc. 245 at 5, 9–12. To make their argument persuasive, Defendants deceptively claim Flowers made "the same mistake[s]" here broadly claiming: 1) he failed to assess

alternate sources of pollution and 2) he failed to use Defendants' chosen technique. *Id.* at 5–12. First, this completely misstates the facts as Flowers did consider all obvious alternative sources, including background, before opining that the Smelter was the primary source (among other minor sources).[24] Second, Dr. Flowers' opinions are reliably based on the undisputed gold standard—EPA's analytical method—for quantifying metals levels in soil. *See* Doc. 248-22 at 18. Absolute exclusion of alternatives is not possible nor required for establishing Plaintiffs' claims.

Flowers explained that he excluded other obvious alternative sources based primarily upon the correlated elevations of three metals that decrease with distance from the Smelter decisively pointing to the Smelter as the primary, substantial source of contamination. Defendants boldly claim that Flowers failed to assess alternate sources of soil pollution in the PCA thereby dooming his opinions as in *Lee-Bolton*. Doc. 245-1 at 9–12; *Lee-Bolton,* 319 F.R.D. at 374. Defendants are wrong. Contrary to Defendants' claim and consistent with *Heller,* Flowers' analysis considered alternative sources, explaining this in a section of his report devoted to the consideration sources Defendants raised. Doc. 248-6, at 24–27 (considering and excluding numerous alternative sources as plausible cause of class-wide contamination). Analyzing Defendants' data, Flowers concluded:

> the myriad of alternate sources proffered by USMR to explain soil contamination outside the AOC cannot explain the sympathetic variation of concentration observed as a function of distance from the smelter complex; contamination falls off with distance, and samples taken near the periphery of the Proposed Class area are significantly less contaminated as expected in a smelter plume. *Id.*, at 24–28.

This spatial and statistical analysis, in conjunction with historic evidence of the Smelter releasing "enormous amounts" of contamination containing all three metals, aerial photos of billowing

[24] *Heller* at 156 ("To require the experts to rule out categorically all other possible causes for an injury would mean that few experts would ever be able to testify … Obvious alternative causes need to be ruled out.").

smokestacks, and modeling demonstrating how those emissions "blanketed" the PCA, support Flowers' rejection of alternate sources as the cause of PCA-wide metals pollution. Here, consistent with Occom's Razor, the simplest explanation—that one *major* source, the Smelter, known to have emitted thousands of tons of all three metals—is the only plausible explanation. As Flowers explained, "**there is no alternate source with a large feedstock laced with copper, lead, and arsenic…that is known to emit significant particulate and gaseous emissions that transports heavy metals far away (miles) from the site.**" *Id.* at 24. Flowers explained how each of the alternate sources is incapable of explaining the PCA soil contamination. *Id.* at 24–27.

***LBP*:** Defendants criticize Flowers for purportedly failing to "quantify lead-based paint's impact" on lead levels in the PCA. Defs.' Br., at 8. Defendants baselessly insist that the only means to conclude that the Smelter is the *primary* source of pollution is to "quantify" the effects of every other possible source. But this is mistaken and glaringly inconsistent with Defendants' expert Arcadis who delineated Smelter impacts without such quantification. *See* Ex. 16, at 47–48. Flowers' conclusion that the Smelter was the primary source concedes that other sources contributed lead, including background and LBP, but is more than sufficient to establish the Smelter as *the substantial factor* in soil contamination across the PCA. *Heller v. Shaw Indus.*, 167 F.3d. at 156. Flowers observed that LBP, not enriched in copper or arsenic, may have contributed minor lead but fails to explain widespread sympathetic elevations in copper and arsenic, which establish LBP's secondary role in the PCA contamination. *See, e.g.,* Doc. 248-6, at 27.

To amplify their misplaced critique of Flowers, Defendants overstate the role of LBP.[25] Repeatedly misrepresenting EPA's conclusions, Defendants misleadingly claim that housing age

[25] *See* Defs.' Br. at 8–9; Ex. 2 (Sep. 12, 2019) Tr. at 90:20–23 (Defendants' expert concluding LBP is overwhelming source of lead).

is the "strongest predictor" of soil lead *because of LBP*. Defs.' Br. at n.2, 8–9. EPA's next sentence conclusions makes it clear that this is not because housing age is a surrogate for LBP but because housing age directly reflects the last major soil disturbance. *See* Doc. 246-7 at 11 ("Building age measures the length of time since the construction of the building and, in many cases, may be the last major disturbance of soil."). Thus, home age and corresponding soil disturbance are associated with lead from *all sources*, not just LBP. Defendants' claim also ignores the fact that increasing home age in Carteret also coincides with proximity to the Smelter.[26] It is therefore impossible to say the age of homes alone explains the increasing lead claimed with older homes because home age is directly confounded by both distance from the Smelter and soil disturbance, creating competing explanations for decreasing lead more credible than LBP.[27]

LBP also explains too little. First, none of the studies Defendants' experts cite support soil-lead levels as high as those detected in the PCA based on LBP alone, particularly given the housing age in Carteret.[28] Second, Defendants' soil sampling plans specifically avoided sources of LBP (and arsenic). Doc. 248-13, at Tr. 42:25–43:09; 259:14–260:01. By avoiding LBP hot-spots, sampling in Carteret biased lead concentrations low and make it impossible to draw comparisons with studies where these hot-spots were not avoided, and rather were the focus. Finally, LBP cannot explain the elevated presence of arsenic and copper or their sympathetic relationship with lead across the PCA, specifically the magnitude and trio of metals throughout Carteret. *See* Doc.

[26] *See e.g.*, Ex. 3, Tr. at 64:21–65:5; 68:4–16; Doc. 248-18 (1925 soil map showing residential development started near smelter).
[27] *See* Ex. 2, Tr. 350:3–353:20; at deposition Ex. 19 at 2 showing Hall data with age *and* with distance from Smelter); *Id.* at deposition Exs. 10–12 (Graphs lead, copper, and arsenic levels with distance from the Smelter).
[28] *See, e.g.*, Doc. 248-13, Tr. 307:25–312:04; Ex. 15, at 39, Table 15 (levels don't typically exceed 200 ppm in yard locations, much less the 400 ppm SCC).

248-6, at 17. While LBP may be an isolated contributor of lead alone, it is not a substantial cause of the copper, lead, and arsenic contamination in the PCA.[29] Copper and arsenic levels decreasing in unison with distance point to a source other than LBP—the Smelter.

***Fill*:** Flowers considered the role of fill and conceded that fill may have made localized contributions to soil metals but concluded, based on maps of its use, contaminant loadings, comparison to background levels, and other lines of evidence, that filling cannot explain the widespread contamination in the PCA. Doc. 248-6 at 26; Doc. 248-18, at 30–31. Flowers did not contend, as claimed, that fill was void of these naturally occurring metals but that fill loadings for metals like copper *relative to background* were not typically significant. Doc. 248-18, at 31. Acknowledging that fill may have elevated metals, including copper, in direct disposal of Smelter fill found in the PCA, he noted this is the exception. *See, id.*

Defendants employed a series of microscopes capable of pinpointing lead, copper, and arsenic on particles as small as one-thousandth of a millimeter. This effort disproved Defendants' own thesis. Despite analyzing over 400 samples with "indicators of fill,"—including hand-picked and biased samples containing the highest levels of metals[30]—only four (or 1%) were identified as a source of arsenic and less than 7% were indicated as being sources of lead. *See,* Doc. 248-17 (simple percentages calculated). *None of the fill samples were a source of copper*. *Id.* Other than

[29] *See e.g.*, Ex. 4, Tr. 108:22–109:16; Doc. 248-5, at 27; Ex. 5, Tr. 138:20–139:1.

[30] Defendants claim lead paint was identified in numerous samples via microscopy as having "the strongest correlation with lead soil levels," overstating the evidence of widespread LBP. Defs.' Br. at 3, n.2. Defendants pre-screened samples, by selecting those with the highest metals levels and selecting samples previously identified as containing indicators of fill, such as paint chips. *See, e.g.*, Ex. 9, Tr. at 24:17–24; 96:8–97:14; 100:15–02:3; 218:9–19:6. Despite biased selection, only *some of the paint contained lead*. *See id.* at 91:19–21; Doc. 248-17; Doc. 248-22. Furthermore, several samples were not of PCA soils taken with the same protocols. Ex. 9, Tr. at 121:2–21.

paint chips, *only some of which contain lead*, Defendants' expert could not identify a single fill "indicator" that contribute lead, arsenic, and copper to the soil. Ex. 9, Tr. at 68:1–75:19.

Having failed to confirm fill in the PCA as a source of significant lead, copper, or arsenic in PCA residential soils (much less all three), Defendants cast aside their expert analysis and shotgun irrelevant, hearsay exhibits with fill from outside PCA soils. Defs.' Br., at 11–12. These include cherry-picked exhibits of isolated third-party testing of commercial fill that found elevated copper but have no evidentiary connection to residential soils and were not considered by Defendants' experts. Yet they continue to claim these prove Flowers' conclusions are unreliable. Defendants' newly identified references to the mere presence, or occasional elevation, of copper do not upset Flowers' analysis or refute his conclusion that PCA contamination is inconsistent with fill[31] or support their bold contention that these show his analysis is "demonstrably false." *Id.* This baseless claim is contradicted by Mattingly's findings that fill materials were not a significant source of any, much less all three, of these metals. Fill may have contributed *some* metals to *some* soils in Carteret, but that secondary contribution excuse the Smelter's spewing as a substantial factor which accounts for the consistent elevation of metals sporadic fill does not explain.

At best, the presence of an "alternate source" only suggests that the Smelter was not the *exclusive source* of lead, copper, and arsenic in the PCA—an unremarkable observation of no consequence to Rule 23, and thus not ripe for *Daubert* analysis. Were it otherwise, the mere presence of a copper penny, lead battery, arsenical rat poison, or even the naturally occurring

[31] For example, Defs.' Ex. OO identifies "fill" based on ash and cinder neither of which Defendants' expert identified as being a significant source of lead, copper, or arsenic. Ex. 9 at Exhibit 768 to Expert Report of Mattingly. Defendants' also point to three investigations showing sporadic elevations of copper in commercially used fill but fail to provide any evidence of their relevance to residential fills. *See* Defs.' Br. at 12 (citing Exs. KK, MM, NN).

background metals on any PCA property would torpedo class certification here and, by extension, in any case involving contamination. The law is not so unforgiving.[32] The mere "existence of multiple sources of contamination … is not a per se bar to class certification" because the "key issue" for class certification is Defendants' conduct.[33]

2. Dr. Flowers provided reliable evidence of soil metal concentrations

Contrary to Defendants' forced claims, *Lee-Bolton* is not analogous and has no relevance to Flowers' opinions here. The central concern in *Lee-Bolton* was that the methodology for the data which *he was provided* and subsequently relied on to conduct his analysis was, itself, deficient and thus deemed unreliable. Specifically, the court said that the CALUX method,

> is not valid for making quantitative determinations…all of the experts agree that the CALUX method is incapable of reliably sorting out accurate quantifications…CALUX paints with too broad a stroke… the CALUX results are skewed, misleading, and overall unreliable for quantification or pinpointing the source of PCDD/F." *See Lee-Bolton*, 319 F.R.D. at 372–76.

The Court reasoned that the CALUX "screening" methodology reports a *single* number for *all dioxins* and therefore cannot distinguish between the hundreds of chemicals within three distinct categories, dioxins (TCDD), chlorinated furans (PCDD/F), and brominated furans (PBDD/F), only one of which could be attributed to the Koppers site the other of which could not.[34] Thus, the

[32] *See Perrine v. E.I. Du Pont De Nemours*, 2006 WL 5156908 (W.Va. Sept. 14, 2006) ("Even assuming the existence of alternate sources, Plaintiffs have demonstrated that the emissions from the [] Smelter facility will be a common, pivotal issue in this litigation."); *Collins v. Olin Corp*., 248 F.R.D. 95, 104 n.9 (D. Conn. 2008), (defendants' "entire course of conduct and knowledge of its potential hazards is a common issue to the class, which courts have found to be sufficient even in cases where there are multiple possible sources of contamination."); *Ludwig v. Pilkington North America, Inc*., 2003 WL 22478842 *5 (N.D.Ill. 2003).

[33] *Bentley v. Honeywell Int'l., Inc.*, 223 F.R.D. 471, 481 (S.D. Ohio 2004).

[34] *Lee-Bolton v. Koppers Inc.*, 319 F.R.D. 346, 354 (N.D. Fla. 2017) ("It is undisputed that PCDD/F is associated with the Koppers Site and PBDD/F is *not*, and thus, Defendants are not responsible for any contamination from PBDD/F."); *see also id.* 354–55, 372.

problem for the *Lee-Bolton* court was that the CALUX method reports a categorical result for total "dioxin-like" compounds failing to identify the *actual* presence or concentration of any specific chemical. Because the CALUX method could not distinguish 1) the contaminants that were known to have originated from the site, from 2) contaminants that were known to have not originated from the site, CALUX could not reliably be used to quantify site-specific contaminants; and without reliable quantification, it could not reliably identify a decreasing trend with distance. *Id.* at 355.

These same concerns simply do not apply here. Instead, EPA's gold standard analytical methods for specifically *identifying* and *quantifying* lead, copper, and arsenic in soil were used. Unlike in *Lee-Bolton*, the data utilized by both Plaintiffs' and Defendants' was based on EPA's methods for identifying and quantifying metals in soils.[35] Reliably identifying and quantifying copper, arsenic, and lead levels individually, the data establish a pattern of elevated levels of all three metals across the PCA, creating a "fingerprint" for substantial Smelter impacts, closing the analytical gap that the *Lee Bolton* court existed due to the unreliable analytical method. The method here *does discriminate* between the precise contaminants that originated on-site and other potential contaminants that did not.[36] And the method used reliably quantifies those precise contaminants known to have originated from the Smelter. Flowers' opinion would only fail here if the method used only detected "metals" categorically and failed to quantify lead levels. Contrary to Defendants' strained analogy to *Lee-Bolton,* Flowers' methods here are reliable because the data itself is reliable and thus capable of identifying a source fingerprint.

[35] Soil sampling used EPA methods for metals 6010 and 6020 which report individual metals.
[36] The method does not confuse lead, arsenic and copper with other toxic metals, for example mercury, chromium and/or cadmium which could exist as co-contaminants.

Despite selecting and using the EPA methods for their own delineation of Smelter contaminants, Defendants now claim they are unreliable and suggest that non-EPA, microscopic analysis of individual particles is required for reliable delineation.[37] The reality is that this method is not even capable of quantifying metal concentrations in soils as is essential for comparing with background or screening limits. Ex. 9, Tr. 225:21–23. Furthermore, Defendants' argument requiring one method over another is misplaced as reliability does not "require experts to follow a particular methodology when more than one exists."[38] As the Court in *Johnson & Johnson* advised, "[t]o the extent that [counsel] is asking this Court to require experts to follow a particular methodology when more than one exists, [counsel] misapprehends the Court's gatekeeping function." 900 F.Supp.2d. at 493.

Defendants argue Flowers' conclusions are unreliable because of data "variations" and "hot spots." Defs.' Br., at 11. But, Defendants' "conceptual site model" ("CSM"), designed to provide context for interpreting soil impacts, establishes that such variation is expected:

> Although air deposition may initially deposit these metals in a relatively uniform pattern, the cumulative localized disturbance (e.g., excavations, grading, landscaping, wind erosion) of soil at any given location that can occur, in this case over a period of 80 years, can redistribute these metals and ***result in localized variances in soil metals concentrations***. Doc. 248-16 at 9 (emphasis added).

Localized variations are evident even in areas where Defendants concede Smelter impacts like the AOC where "there is no dispute that there is a decreasing exponential trend in metal concentrations." Doc. 138-1 at 12; Doc. 248-16, at 37, Figure 7-6. These variations are expected and thus do not disprove Smelter impact.

[37] *See, e.g.,* Defs.' Br. at 10 (critiquing Flowers for not using SEM/EDS); n.33 (Rosenfeld).
[38] *See, In re Johnson & Johnson Derivative Litig.*, 900 F. Supp. 2d 467 (D.N.J. 2012).

Defendants' prior efforts to delineate off-site contamination reinforce the reliability of Plaintiffs' experts' methodologies, particularly the reliance on existing soil data.[39] Defendants' delineation, analogous to determining a class area, was completed long before Defendants hypothesized or analyzed alternative sources or implemented microscopic methods. *Id.* Defendants reached their own conclusion regarding the boundary of Smelter impacts relying *exclusively* on a limited 264 data points, generated by the same methods Flowers used, without invoking the methodologies and analyses Defendants now demand of Plaintiffs' experts. Ex. 16 at 47–48.[40]

Flowers weighed multiple lines of evidence including expansive soil data, covariation of metals, and statistical and trend analyses, as well as historic operation and emission data, historic aerial photographs, historic air modeling, and numerous emission violations in forming his opinions. Doc. 248-6, at 1. His analysis of multiple lines of evidence has been described as an evaluation of the relevant data and scientific evidence, using judgment and interpretation, to draw an "inference to the best explanation" and is often referred to as the "weight of the evidence" method, which is a reliable scientific methodology.[41] Flowers' focused conclusions are derived from a reliable methods and nothing argued by Defendants reasonably suggests that they are the product of the type of "unsupported speculation" warranting exclusion.[42]

ii. Sullivan's Air Model is Consistent with and Provides Support for Plaintiffs' Expert Opinions on the Source of Soil Contamination

[39] Doc. 248-13, at 26:5–27:17; 29:13–17.
[40] *See, generally,* Ex. 16 (delineation was based on spatial analysis of trends seen in sampling data); Doc. 248-8 Tr. Vol 1 at 69:20–70:19; 89:2–20 (Defendants moved from modeling to reliance on "actual samples"); Doc. 141-1 at 2–3.
[41] *See Milward v. Acuity Specialty Products Group, Inc*., 639 F.3d 11, 17 (1st Cir. 2011); REFERENCE MANUAL ON SCIENTIFIC EVIDENCE at 20, 660 n.75 (3d ed. 2011).
[42] *See Calhoun v. Yamaha Motor Corp., U.S.A.*, 350 F.3d 316, 321 (3d Cir. 2003).

Defendants ridiculously assert that Sullivan's air model "disproves" Plaintiffs theory of contamination. This misrepresents Sullivan's opinions and the qualitative purpose of his model. This Court previously established that the true quantity of fugitive emissions deposited into the atmosphere from the Smelter "cannot be determined."[43] Because of this determination, and the lack of reliable data on the true quantity of emissions during the years of peak metal deposition in the PCA, Sullivan made no attempt to quantify modeled soil concentrations in the PCA. Instead, Sullivan provided modelling of emissions demonstrating the pathway for metal deposition throughout the AOC. Defs.' Ex. G, at 264:6–19; Doc. 248-3, at 42–45, Figures 15-17. Defendants argue that because the model does not predict lead exceeding NJDEP standards it fails to support Plaintiffs' case. Defs.' Br. at 12. This is a classic strawman argument—it misrepresents the purpose of Sullivan's model and then misconstrues its result. Sullivan's model was not intended to quantify predicted levels, something this Court already determined was impossible. Defs.' Ex. G at 264:20–265:4. Sullivan's model is reliable for its limited intended purpose, however, Defendants' misuse of this model for proof (or disproof) of quantified levels to make comparisons is unreliable.

Sullivan modeled used the American Meteorological Society/EPA Regulatory Model (AERMOD). Doc. 248-3, at 9. AERMOD is an EPA-approved method for demonstrating lead deposition. *Id.* at 5. The model simply demonstrates how metal emissions from the Smelter were carried by the local meteorology, blanketing the class area resulting in a general trend of "decreasing soil deposition impacts as a function of distance from the facility up to and beyond the [PCA]." *Id.* at 10. For this qualitative purpose, the model provides probative evidence of Plaintiffs' claims demonstrating the pathway for metal deposition from the Smelter in the PCA.

[43] *Reichold, Inc. v. U.S. Metals Refining Co.*, 655 F.Supp.2d 400, 415–16 (D.N.J. 2009).

iii. Sullivan's Opinion Regarding Historic Fill is Reliable

Sullivan also provides a critique of Mattingly's opinions regarding the role of fill in PCA contamination. Defs.' Ex. DD, at 7 quoting Ex. 9 at 93:20–25. Mattingly, who holds a bachelor's in biology and M.S. in environmental science, analyzed select microscopic particles from 404 samples previously screened for visible indicators of fill from over 30,000 soil samples taken in Carteret. *Id.*, at 29. Mattingly used a series of microscopes to hunt for very tiny particles deemed "indicators" of fill (e.g., cinders, brick, etc.) and hired consultants to individually analyze those particles for metals. His analysis confirms that these "indicators of fill" are not significant sources of lead, copper, or arsenic. *See* Ex. 9 at 88–95; Ex. 17, at 30. As Defendants highlight, Mattingly also failed to find Smelter emissions including in soils from areas where Defendants' agree was impacted[44] leading to his absurd opinion that "there [are] no USMR emissions detectable" off-site. Ex. 9, at 85:2–8; Ex. 8, at 203:19–204:6. Despite Defendants' characterization, Mattingly found particles "indicating" fill were ubiquitous, not "fill" itself, and confirmed those particles were not sources of these metals, a finding Defendants ignore. *See* Ex. YY.

Mattingly's analysis suffers from a cavernous analytical gap[45] marred by glaring inconsistencies and sharp contradictions with other lines of evidence regarding Smelter emissions—these are what Sullivan opines on. Sullivan based his critique on multiple lines of evidence, including fugitive and stack emissions data, boring logs, meteorology and air modeling,

[44] *See* Defs.' Br. at 14 ("stereomicroscopy identified fill (but not smelter air emissions)…").
[45] Generally, Mattingly took samples that were 1) high in metals and 2) had field notes indicating paint, brick, etc. on the boring logs, then confirmed through microscopy the presence of particles that were "indicators of fill"—a largely circular process. *See* Ex. 17, at 29–30. Having identified "indicators of fill" Mattingly leaps the gap contending that "fill" laden with high levels of lead, copper and arsenic (as suggested by commercial fill sites) is present in residential soils, despite that his own analysis failed to find them.

metals migration in soils, and voluminous soil samples, in addition to his review of Mattingly's findings. Ex. 17, at 9–12; 29–33; Ex. 8. Like Mattingly, Sullivan did not perform microscopy or offer opinions on microscopy itself. Rather, Sullivan is a certified consulting meteorologist with extensive experience, discussed above, who reliably reviewed operational and sampling data, boring logs, literature, and his own modeling to rebut Mattingly's conclusions that Carteret's unique contamination is due to fill with zero identifiable Smelter contribution. Doc. 248-6, at 3, 9. For example, Sullivan found that lead contamination decreasing as a function of depth is consistent with airborne deposition not impacts from fill noting it is "routinely observed…from legacy smelters that operated for many years…" Ex. 17, at 31–33; Defs.' Ex. DD at 31.

Defendants' argument that Sullivan is not qualified to offer his critique of Mattingly reflects exactly the kind of "overly rigorous" standards that the Third Circuit has rejected in favor of a liberal qualification standard.[46] Sullivan's critique that historical fill inadequately explains the consistent, widespread, and significant exceedances of background metals in Carteret is rooted in reliable methods. Defendants' criticism rests on the *ipse dixit* of counsel that, without reference, their methods are exclusive and their conclusions decidedly correct. Yet Mattingly's conclusions defy both scientific assessment and common sense—failing to find any Smelter contamination from a Smelter that spewed tens of thousands of tons of lead for decades, attributing the pollution and cleanup of Carteret to "ubiquitous" fill, the indicators of which are nearly void of these metals.

b. Rosenfeld's Source Identification opinions are reliable because his evaluations identify that arsenic is a co-contaminant of smelting that is not attributable to LBP

[46] *See supra* at n.8. Defendants' argument is also striking because their lead expert, Hall, who opines on several lines of evidence, including the microscopy, has limited formal expertise holding only a bachelor's degree in civil engineering. Ex. 2, at 127.

Dr. Rosenfeld, who holds an M.S. in Environmental Science and Ph.D. in soil chemistry with extensive experience in evaluating the fate and transport of contaminants, concluded "while additional sources of [lead, arsenic, and copper] may exist in Carteret, it is evident that USMR is the primary source of anthropogenic soil contamination in the [PCA]." Defs.' Ex. O at 2–3, 22. Defendants contend that this qualitative opinion should be excluded because he did not rely on quantitative determinations to reach his conclusions. Defs.' Br. at 16–17; Defs.' Ex. D at 90:24–91:9. But, the Third Circuit makes it clear that reliability does not require quantification.[47] Rosenfeld reviewed Defendants' emissions data, conceptual site model, delineation of the contamination boundary, and performed statistical analysis on the extensive soil sampling. Doc. 248-5, at 4–5, 7–10, 17–22. Without reference, Defendants point to a handful of things Rosenfeld did not do failing to establish why they are required and ignoring the fact that none of these were part of their own effort to delineate.[48] Exceeding USMR's own delineation efforts, Rosenfeld's opinion that the Smelter is the primary source of metals in Carteret is reliable.

c. Mr. Havics' rebuttal opinions are reliable

Havics, a microscopist, criticizes Mattingly's conclusions based on microscopy because they are biased. Once again, Defendants' attack the expert's conclusions, simply insisting that Havics is wrong and that Mattingly was reliable. Defs.' Br. at 17–19. Disagreement between experts is unexpected and is not a basis for exclusion. [49] It is ultimately "the function of the

[47] *See In re Johnson & Johnson Derivative Litig.,* 900 F. Supp. 2d at 493 (quoting *Oddi v. Ford Motor Co*., 234 F.3d 136, 156 (3d Cir. 2000) ("Daubert does not require a paradigm of scientific inquiry as a condition precedent to admitting expert testimony....")).
[48] Defs.' Br. at n.33; Ex. 12, at 17; see *supra* p. 17 ("Defendants' delineation").
[49] *See, In re Zyprexa Prod. Liab. Litig.*, 489 F. Supp. 2d 230, 285 (E.D.N.Y. 2007) ("The mere fact that an expert's testimony conflicts with the testimony of another expert or scientific study does not control admissibility.").

factfinder, utilizing the conventional devices of cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof, to determine which is the more trustworthy and credible" between contradictory experts. *Id.* citing *Daubert,* 509 U.S. at 596. Defendants' criticism as to Havics can be summed up as assertions that Havics "misses the mark" or is "wrong." But this is not a basis for exclusion. "'[I]naccuracies in the underlying assumptions or facts do not...render [his] testimony inadmissible.' Their arguments are better left to attacking 'the weight, not the admissibility, of the testimony.'" *Daryl K. Wash. & Sunday Players, Inc. v. Kellwood Co.*, 105 F. Supp. 3d 293, 327 (S.D.N.Y. 2015). Exclusion is not warranted.

i. Havics Correctly Explained Mattingly's Methods and Selection

Defendants' argument on Havics is based on exaggerated criticisms that highlights tiny trees and ignores the forest. By clarifying that the selection criteria were merely "approximations," they base their argument on inflated rhetoric that "Havics misstates the samples Mattingly examined," that "Havics admit[ed] he was wrong," his opinions were "shifting and inconsistent." Defs.' Br. at 18. But their citation to Exhibit J does not support this claim. Defs.' Ex. J at 70:7–12. During his deposition, Havics explained that he reviewed Mattingly's analysis and the SEM-EDX "are in the upper 5 percent" and that he analyzed the data considering Mattingly's reported concentrations. *Id.* at 70:18–22. While Havics clarified that Mattingly *ran* SEM-EDX on samples outside of the upper and lower five percent, the samples that Mattingly *uses* for his conclusions are all in the upper- and lower-five percent range. Ex. 18, 136:25–137:4. While Mattingly may have looked at samples between the upper and lower five percent "the only ones he explains and uses for his evidence are all in the upper 5 percent." *Id.*

ii. Havics' Criticism that Mr. Mattingly's Analysis was Biased is Reliable

Defendants also fail to address the critical substance of Havics' opinion: that Mattingly's judgmental sampling was not representative of the PCA. *Id.* at 87:12–19. Havics explained:

> [Mattingly's] purpose was to essentially either join or disjoin the smelter from the off-site location data, which then means you need to get representative data associated with that with…concentrations…And if I look at the concentrations, you could see that they're skewed in terms of the full representation of the underlying distribution. Therefore… they're not fully representative of the source distribution from which they were pulled, making it difficult to draw good conclusions. You can draw subset conclusions, but to draw broad-based conclusions about the full underlying distribution, I wouldn't do it because you don't have a good representation based off of the histograms that I'm seeing here. *Id.* at 175:21–176:11.

Thus, the central issue is whether-or-not the samples are representative of the area over which his conclusions extend. Here, Mattingly's samples were not. *Id.* at 20:21–21:9. For example, Mattingly confirmed that he did not consider whether samples were outliers—with metal levels so high they were excluded by Arcadis and not used for delineation—instead purposefully selecting several for his analysis. Ex. 8, Tr. 230:12–234:24.

Havics acknowledges that a microscopist *could* justify judgmental sampling but opines that Mattingly does not. Defendants broadly reference EPA guidance generally recognizing judgmental sampling and claim Mattingly justified his bias directing the Court to sample selection criteria found in Table 2 of Exhibit W. Defs.' Ex. W, Table 2. While this table from Mattingly's report lists criteria, it does not explain *why* his selection of samples with extreme levels are representative of the role of fill in PCA soils. Havics explains that "[i]t all goes back to fitness for purpose. What's it being used for?" Defs.' Ex. J at 93:21–22. In addition to using outliers, Mattingly also use of samples to represent Smelter emissions, which he was forced to admit may not be representative.

Id. at 93:21–94:3.[50] Havics' criticism that Mattingly failed to establish that samples he used were sufficiently representative for his purposes is reliable.

d. Blum, Flowers, and Sullivan are qualified to draw comparisons between the Smelter and other smelters

As discussed above, all three experts have ample qualifications to offer opinions on smelter operations and the fate of airborne heavy metals. All three of these experts meet the Third Circuit's liberal qualification standards and can reliably offer opinions regarding relevant literature and findings at other smelters and the implications for the Smelter's footprint on the PCA.[51]

e. Plaintiffs' experts' finding that the Smelter's footprint is comparable to the footprint of other smelters should not be excluded

Defendants argue that factors such as stack height and wind direction affect quantitative aspects of metal deposition, but none of these experts rely on these analogies to *quantitatively* establish the extent of a plume, but simply to provide an additional line of evidence supporting soil sampling. Ex. 4, Tr. 53:11–24. A role primarily addressed by the extensive soil samples.

As discussed above, Blum, Flowers and Sullivan are all highly qualified and capable of opining on the environmental impacts of smelters on soils despite not specializing in smelter *operations*.[52] Sullivan explains that all smelters share one characteristic: they emit heavy metals into the atmosphere. Ex. 17, Tr. 32:17–24. Defendants argue that factors, such as stack height and

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[50] Mattingly admitted his own uncertainty. Ex. 8, at 76:13–18 ("So you don't know how representative those slag samples are of any process on the facility correct? No.")

[51] *Paoli*, 35 F.3d at 741; *Schneider ex Rel. Estate of Schneider v. Fried*, 320 F.3d 396, 404 (3d Cir. 2003); *Pineda*, 520 F.3d at 244.

[52] If expertise on smelter operations is required, then Defendants' experts, including their two main experts, are unqualified. Hall has a bachelor's degree in civil engineering and is not a geologist, geochemist, soil scientist, or microscopist, yet provides opinions covering a range of these topics. *See* Ex. 2, Tr. at 30:24–32:5. Rouhani is an environmental statistician, not a geochemist or soil scientist, but he offers opinions about the impacts of metals, background concentrations, and soil fate and transport of those metals without such specified expertise. *See* Ex. 10, Tr. at 19:23–21:8.

wind direction affect the *distance* of metal deposition, but Sullivan's opinion did not address distance, only that all smelters deposit metals. Flowers similarly did not compare the Smelter to other smelters for the purpose of quantitatively delineating the plume—that is what soil sampling is for—but to provide additional lines of evidence. Ex. 19, Tr., 53:11–24.

Blum offers opinions as to how metals from the Smelter deposited across the PCA based on his comparison of the Carteret Smelter to other smelters (e.g. the Horne copper smelter, with a similar stack height, and comparable controls). Ex. 7, at 44–45. Blum reviewed various published investigations of smelter impacts and detailed assessments of four such investigations to evaluate whether the impacts in Carteret are consistent with smelter impacts from other smelters. *See e.g.*, Ex. 7, Tr., 13:19–14:13; 28:4–31:6. Based on his review of these studies (which indicate smelters impact soils 10 to 20 miles (or more) from the source), a review of soil sampling data, and the analysis of other expert opinions, Blum offered the conservative opinion that the Smelter would have impacts *at least* two miles out from the Smelter. *Id.* at 57:19–58:17.

Because "no two smelters [are] exactly the same," Blum considered the similarities and differences between other smelters and the Carteret Smelter, including the type of ores processed and the presence of recycled material, the presence of emission controls, the smelting processes used, emission outputs, years of production, feedstock and furnaces, stack height, and the geographic location and meteorological condition. *Id*. at 17:14–19:1; 38:9–19; 46:1-6; 47:14; 50:12; 70:23–24; 71:4-7. He considered similarities and differences in these factors, the margin of error in relation to the footprint, and soil sample findings showing detectible metal concentrations above background levels and concluded that in the PCA "there is no question that that area close to the Smelter had elevated emissions and deposition…that were clearly discernable." *Id*. at 71:18–23. Defendants' claim that Blum "fails to account" for these factors is incorrect.

f. The opinions of Dr. Jeffrey Zabel are reliable and he is a prominent expert in economics who is qualified to offer them.

Hedonic regression is "the standard economic approach to measuring the impact of environmental contamination on residential property values…which has a long history of applications in the peer reviewed literature." Doc. No. 248-39, at 3. Hedonic regression has been "widely accepted and ha[s] been recognized by the Third Circuit as a means of proving impact and estimating damages at the merits phase."[53] Defendants' effort to preclude Zabel's model at the class certification stage is premature. Plaintiffs have made the requisite "threshold showing" that the hedonic method can establish "class-wide" damages.[54]

The hedonic approach entails a series of standard steps, all of which are easily satisfied in Carteret. Doc. 248-39, at 3. Zabel has already reviewed the Complaint, which includes a map of the PCA and surrounding areas; read all of the physical science expert reports, which establish class-wide Smelter impacts; and collected and reviewed approximately 80,000 sales transactions spanning over 10 years. Doc. 248-39, at 3–6; Ex. 11, 33:10–12; 38–39; 51:12–17; 43:5; 17:3–18:25. Data on school quality are available from the New Jersey Department of Education; the FBI provides crime statistics; the Census Bureau provides demographics data; and the local assessor provides individual property data. Zabel has already provided the hedonic formula. Doc. 248-39, at 6. Thus, contrary to Defendants' assertion, there is no model to "construct." Defs.' Br. at 26. Rather, there are variables to insert and calculations to perform to establish the class-wide

[53] *In re Bulk (Extruded) Graphite Prod. Antitrust Litig.*, Civ. No. 02-6030, 2006 WL 891362, at *13–14 (D.N.J. Apr. 4, 2006) citing *In re Mercedes-Benz Antitrust Litig.*, 213 F.R.D. 180, 189 (D.N.J. 2003); *In re Linerboard Antitrust Litig.*, 305 F.3d 145, 153 (3d Cir. 2002); *see also, Sterling v. Velsicol Chemical Corp.,* 855 F.2d 1188 (6th Cir. 1988) (applying formula to determine diminution in property value in environmental case).

[54] *See Bulk Graphite*, at *10–14 (citations omitted).

percentage diminution in property, if any. A formulaic, percentage-based, methodology can then be used to calculate and distribute compensatory damages for each class member based on the aggregate loss. *See* Doc. 248-39, at 8. In sum, data to conduct the analysis are readily available and damages can be calculated class-wide, without the need to visit each property. Doc. 248-39, at 8; Doc. 248-40, Tr., 43:10–16, 113:18–114:3 183:13–24.[55]

Defendants' insistence on "individualized" investigations, appraisals, and analyses to calculate damages is economically unsound. Individual appraisals of the value of a property in isolation are *incapable* of determining whether there has been a diminution in property value as a result of Contaminants—hedonic regression can.[56] Despite the hedonic method's undisputed ability to establish class-wide damages, Defendants complain of purported shortcomings in Zabel's narrow, certification phase opinion. They contend Zabel has not yet constructed his model; collected necessary data; conducted an appraisal; familiarized himself with the applicable area and specific levels of contamination; or accounted for alternate sources. Defs.' Br. 24–25.[57] But Zabel has done all that he must to establish the suitability of hedonic methods. Nothing prevents him from performing his analysis at the merits phase. Ex. 11, Tr. 70:5–12.

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[55] There is no plausible alternate source for the lead, arsenic, and copper detected across the PCA. Nevertheless, the hedonic model can account for known alternative sources of contamination. Equation (1) in Zabel's report, includes the term N_{jt} (neighborhood amenities), which include local disamenities, including alternative sources of contamination, if any. Doc. 248-39, at 6. *See also*, Mui and Walsh (2017).

[56] Doc. 248-34, Tr., 63:19–64:3; Doc. 248-39, at 8; Doc. 248-40, Tr., 43:10–16, 113:18–114:3, 183:13–24.

[57] Defendants' attacks on Zabel have been explicitly rejected before. *See, Burdick v. Tonoga, Inc*., 60 Misc. 3d 1212(A) (N.Y. Sup. Ct. 2018), *aff'd,* 112 N.Y.S.3d 342 (N.Y. App. Div. 2019) ("…As noted in Dr. Zabel's reply affidavit, whether environmental contamination has impacted the residential property values of the proposed class members, and to what extent, is an empirical matter. As such, defendant's arguments are premature on a motion for class certification.")

The cases that Defendants relied on are distinguishable. Defendants misrepresent *Gates v. Rohm and Haas*, 655 F.3d 255 (3d Cir. 2011). Gates does not require that plaintiffs "have individualized proof of damages." Defs.' Br. at 27 n.50. In discussing "averages or community-wide estimations" (*Id.* n.50) Defendants deliberately conflate *Gates*' discussion of bodily chemical exposure under the unique circumstances of that case with the calculation of class-wide damages.

Defendants likewise misrepresent *Comcast Corp. v. Behrend*, 569 U.S. 27, 35–38 (2013). Although *Comcast* neither contemplates nor commands environmental Plaintiffs to "isolate" damages as Defendants suggest (*i.e.*, alternate sources Defs.' Br. at 28) hedonic regression is capable of doing so.[58] Hedonic regression is an economic method whose very purpose is to control for the effects of different traits or variables (*e.g.*, isolate damages caused by Smelter Contaminants from other forces) (Doc. 248, at 25–26), which Defendants' expert concedes can be done class-wide. *Id*. Moreover, *Comcast* has been "limited to its unique set of facts" in the antitrust context.[59]

Cotromano v. United Techs. Corp., 2018 WL 2047468 (S.D. Fla. 2018) is likewise inapplicable. Plaintiffs' hedonic model here is unlike the "mass appraisal" methodology that *Cotromano* deemed unfit. *Id.* at *19. The hedonic model can isolate Smelter impacts from housing size, acreage, and the other property attributes that were not accounted for class-wide in *Cotromano*. Doc. 248-39, at 3. *In re ConAgra Foods, Inc.*, 302 F.R.D. 537 (C.D. Cal. 2014) is

[58] *In re Bulk (Extruded) Graphite Prod. Antitrust Litig.*, at *13–14.
[59] *Vista Healthplan, Inc. v. Cephalon*, Civ. No. 2:06-1833, 2015 WL 3623005, *23 (E.D. Pa. June 10, 2015); *see, also, Neale v. Volvo Cars of N. Am., LLC*, 794 F.3d 353, 375 (3d Cir.2015).

inconsistent with *Bulk Graphite*'s holding that "the plaintiffs do not need to establish at this time that they have in hand all of the common evidence necessary to establish class-wide impact."[60]

Unlike in Carteret, *Henry v. St. Croix Alumina, LLC*, 2008 WL 2329223 (D.V.I. 2008) involved the application of "mass appraisal" (not regression analysis) to "uncontaminated properties" under a theory of "stigma." Likewise, the defective "mass appraisal" model in *Morr v. Plains American Pipeline, L.P.*, 2021 WL 4478660 (S.D. Ill. 2021) has no bearing here. *Pedroza v. PetsMart, Inc.*, 2013 WL 1490667, *3 (C.D. Cal. 2013) precluded reliance on a tenuous "survey" whose methodology had never been approved. Here, Zabel relies on established economic methodologies. *Fosmire v. Progressive Max Ins. Co.*, 277 F.R.D. 625, 630–31 (W.D. Wash. 2011) precluded expert evidence that relied on outdated data collected by another expert for purposes of a different litigation. In *Somers v. Apple, Inc.*, 258 F.R.D. 354 (N.D. Cal. 2009) the plaintiffs' expert "conceded that he had never successfully employed a regression model to an indirect purchaser antitrust class action and that he had not yet developed a model or worked with any data. Here, the hedonic model is the standard economic approach to measuring class-wide damages and Zabel has worked with the case-specific data giving him confidence that the model is suitable.

Finally, Defendants' criticism that "Zabel lacks the requisite knowledge or expertise to issue an opinion on real property appraisal" is misleading and misplaced. Defs.' Br. at 29. Zabel's opinion does not rely on appraisal. Nor should it. As demonstrated above, Defendants' own damages experts Zennario and Phillips concede that appraisal is incapable of determining whether

[60] *See In re Scotts EZ Seed Litig.*, 304 F.R.D. 397, 414 (S.D.N.Y. 2015), quoting *In re U.S. Foodservice Inc. Pricing Litig.*, 729 F.3d 108, 123 n.8 (2d Cir. 2013) (*Comcast* requires only that "courts should examine the proposed damages methodology at the certification stage to ensure that it is consistent with the classwide theory of liability and capable of measurement on a classwide basis…Thus, the Court declines to hold an expert, at the class certification stage, must describe his proposed methodologies in the level of detail required by *ConAgra*.").

there has been a diminution in property value because of the pollution, but hedonic regression can. Defendants conspicuously and appropriately do not challenge Zabel's *relevant* qualifications in economics or hedonic regression modeling, including his Ph.D. in Economics; his tenure as Professor of Economics at Tufts University; his decades of experience in the fields of applied micro-economics in the fields of urban, housing, and environmental economics; dozens of peer-reviewed publications; and government grants in these fields. *See* Doc. 248-39.

g. Dr. Rosenfeld's Opinion that 400-ppm is no longer protective is reliable

Defendants argue that Rosenfeld's opinion concerning the 200-ppm lead remediation standard is unreliable because he is unqualified to "divine" future regulatory behavior. Defs.' Br. at 29. Rosenfeld is not divining future action but explains that the 400 ppm SCC is no longer deemed health protective. Doc. 248-5, at 13–16, 23. The 400-ppm standard corresponds with a recommended blood lead level ("BLL") of 10 ug/dL that the CDC now has dropped to 5. Correspondingly, the safe soil level is cut in half to 200-ppm, which New Jersey has applied and EPA and NJDEP recently enforced at a residential lead remediation site. *Id.* at 23; P.L.2017, Ch. 7 (Doc. No. 144-1; *see also* Doc. No. 144-1 n.7. Rosenfeld is properly suggesting a reasonably protective SCC based on current CDC guidance. Rosenfeld's experience and training as a risk assessor, remediation specialist, and as a remedial project manager who oversaw multiple lead remediation activities with evolving regulatory standards for the Navy Base Realignment and Closure program more than qualify him to offer this opinion. Doc. 248-5, at 2–3.

V. CONCLUSION

For the reasons set forth above, Defendants' Motion should be denied.

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Respectfully Submitted,

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CERTIFICATE OF SERVICE

This is to certify that I filed the foregoing *Memorandum in Support of Plaintiffs' Response to Defendants Second Combined Motion to Exclude Plaintiffs' Experts* on August 22, 2022 upon the Court and all parties via ECF service.

/s/ Steven J. German___

Steven J. German, Esq.